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Controlling Pneumococcal Disease Around the Globe

SURVEILLANCE OF INVASIVE PNEUMOCOCCAL DISEASES IN VENETO REGION, ITALY

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Background and Aims: *Streptococcus pneumoniae* is characterized by >90 serotypes and it is a major cause of morbidity and mortality worldwide, especially in children <5 years old and the elderly. It occurs mostly as meningitis, pneumonia and bacteremia. This study aims to describe the epidemiology of invasive pneumococcal disease (IPD) in the Veneto Region (Northeast Italy).
Methods: Data were collected through a system of active surveillance of invasive bacterial diseases based on microbiology laboratories of the hospitals and local health authorities.
Results: In January 2007-June 2013 period, the Surveillance System of the Veneto Region received 963 IPD notifications. The notification rate was 3.0/100,000. The age distribution show a higher incidence in subjects <5 y old (7.4/100,000) and in ≥65 y old age group (7.2/100,000). A decreased IPD incidence in children <5 y old is pointed out from the last quarter of 2009, declining from 5.4 to 1.7/100,000 in the first quarter of 2013 ($p<0.001$); for the ≥65 y old age group, the notification rate trend shows a slow increase in the analyzed period (p=n.s.). A total number of 499 isolates were typified: 69.3% belongs to PCV13 serotypes, 17.6% to the additional PPSV23 serotypes; 13.0% of remaining isolates belongs to strains not included in the available vaccines. In the analyzed period, 68 deaths occurred, with a lethality rate of 7.1%; the 67.6% of deaths occurred in subjects ≥65 y old
Conclusion: Current strategies have significantly reduced the IPD burden in subjects <5 y old instead in the elderly, it is necessary a change of the vaccination strategy.

No conflict of interest

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DECLINE IN INCIDENCE AND MORTALITY OF INVASIVE PNEUMOCOCCAL DISEASE AFTER INTRODUCTION OF 13-VALENT CONJUGATE CHILDHOOD VACCINATION

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Background: We wanted to explore PCV13's effect in reducing IPD-attributable morbidity and mortality, and whether serotype-specific changes were attributable to PCV13's introduction.
Methods: Population-based cohort study based on the linkage of national laboratory surveillance data on IPD and several national registries. We measured changes in IPD-incidence and mortality during baseline (2000-2007), PCV7 (2008-2010) and PCV13 (2011-2012) periods.
Results: We observed a 17% (95% CI, 13%-22%) reduction in the total incidence of IPD in the PCV-13 period. We estimated a 85 (95% CI, 64%-95%) reduction in the incidence of the six additional PCV13-serotypes and 74% (95% CI, 63%-82%) for IPD caused by all serotypes in children <2 years. We observed a 28% (95% CI, 18%-27%) reduction in IPD-attributable 30-day mortality, from 3.4 deaths (95% CI, 3.2-3.6) to 3.1 (95% CI, 2.8-3.4) and 2.4 (95% CI, 2.2-2.7) per 100.000 population in the PCV7 and PCV13-periods. The decline in mortality was observed across all age groups, but mainly in the non-vaccinated population. For serotypes 1 and 3, there were no significant changes in incidence beyond what would be expected from the natural cyclical patterns. There was a significant increase in 19A-incidence following PCV7, but by 2012, the incidence declined towards baseline levels.
Conclusion: We observed a further decline on the incidence of IPD shortly after the shift from PCV-7 to PCV-13 in the national immunization programme. There was a substantial population-level decline in pneumococcal-attributable mortality of nearly 30% among non-vaccinated persons.

Conflict of interest